

## **REMARKS**

Claims 27-36 and 38-47 are pending in the present application. Claims 39-43 have been withdrawn. Applicants are neither making any amendments, adding any new claims, nor canceling any claims.

### **Rejection under 35 U.S.C. § 103(a)**

Claims 27-30, 32-36, 38, and 44-47 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kane, *et al.* (U.S. Patent Application 2004/0146434) (hereinafter “the Kane reference”) in view of Blanton *et al.* (U.S. Patent Application 2005/0136250) (hereinafter “the Blanton reference”).

Applicants traverse the rejection and request reconsideration thereof as the Office Action fails to teach all of the claim limitations and fails to show a suggestion or motivation to combine the cited references in the manner proposed in the Action.

Independent claims 27 and 38 describe a method and a system, respectively, for preparing a plug of solid material, exposing that plug to radiation, and detecting and analyzing the radiation scattered from the plug. When the radiation is x-ray radiation, the angle of incidence is defined as less than 2.5 degrees.

The Kane reference discloses a method for manipulating small amounts of solids, where manipulating is defined in terms of “obtaining, transferring, dispensing, mixing, and/or weighing,” and the method is used to provide accurate portions of pharmaceuticals or other solids (Kane at [0006]). Within its disclosure, the Kane reference cites three separate embodiments: (a) where a powder is compressed into a plug and dispensed; (b) where a specific measure of solid is dispersed in a liquid slurry and the liquid subsequently removed; and (c) where the specific volumes of solids are manipulated using adhesive surfaces (*see id.* at Abstract).

Contrary to the assertions in the Office Action, the Kane reference does **not** describe or teach that **a plug of solid** material is exposed to radiation and that the corresponding radiation is subsequently detected and analyzed (see Action at page 3, lines 4-6). Instead, the Examiner appears to have chosen features from two separate embodiments (forming plugs and manipulating solids with adhesive surfaces) in an attempt to arrive at the claimed

invention. However, it is well-established that “it is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one skilled in the art” (see M.P.E.P at §2141.03).

The passage cited by the Examiner in support of the rejection actually describes the situation where a dispensed *powder* is placed on an adhesive surface, and the “solid-state analysis is performed to verify that the solid has not substantially changed in form during transfer” (see Kane at [0138]). This particular paragraph (paragraph [0138]) is the last paragraph of Example 5 titled *Manipulating Solids by Using Adhesive Surfaces*. This example explicitly describes the solids used in terms of powders, not plugs of compressed materials (*see id.* at [0131]).

Further, the Office Action states that “powder x-ray diffraction is a preferred method of analysis (*claims 27 and 38*)” (Action at page 3, line 22). In fact, x-ray diffraction is not listed as a *preferred* method of analysis, but one of an extended list of possible techniques which “*can be used*” in determining whether the powder has changed in form, the listing including ‘NMR spectroscopy (e.g.  $^1\text{H}$  or  $^{13}\text{C}$  NMR), Raman spectroscopy (e.g., resonance Raman spectroscopy), X-ray spectroscopy, powder X-ray diffraction, absorption and emission spectroscopy (e.g., infrared, visible, and ultraviolet absorption and emission), birefringence, differential scanning calorimetry (DSC), and thermogravimetric analysis (TGA)” (Kane at [0138]). The Kane reference describes no benefit or preference to using x-ray diffraction over any other analytical technique.

The only other part of the Kane disclosure where any specific analytical techniques are described is in Example 4 (*Manipulating Solids by Producing a Slurry Suspension*). In this Example, the powders are combined in a liquid carrier to form a slurry, dispensed, and the liquid component subsequently removed. Again, the purpose of the solid state analysis (of which x-ray diffraction is listed as one of many possible techniques) on the resulting powder or film is to ensure that the solid has not changed in form (see [0129]).

Thus, not only does the Kane reference fail to disclose the angle of incidence of the x-ray beam to be less than 2.5 degrees as recited in claims 27 and 38 and as acknowledged by the Office Action, the Kane reference also fails to teach or suggest a method or system for exposing *a solid plug* of material to radiation as recited in claims 27 and 38. Further, and

contrary to the Office Action, the Kane reference fails to disclose any benefit or preference to using x-ray radiation for analyzing solids.

The Office Action attempts to cure these deficiencies with the Blanton reference (in particular, see Blanton at [0039]). The Blanton reference discloses a “process for the preparation of a self-assembled superlattice thin film of organic nanocrystal particles” (see Abstract) which have particular application in “display technologies and display products that can include liquid crystal (LC) displays and organic light emitting diode (OLED) displays” (*id.* at [0011]). The Blanton reference deals exclusively with ***superlattice thin films***, and teaches that these superlattice thin films are “typically of a thickness of less than about 10 micrometers, preferably less than 1 micrometer, and more preferably less than 0.1 micrometer” (*id.* at [0039]), which are analyzed through small-angle x-ray diffraction.

The Blanton reference fails to cure the Kane reference’s deficiency in that it too fails to teach a method or system for exposing ***a solid plug*** of material to radiation. The fact that the combined references fail to account for all of the limitations present in independent claims 27 and 38 is itself fatal to a *prima facie* finding of obviousness.

But moreover, there is no articulated reason that the skilled artisan would look to the Blanton reference for applying a small angle of incidence when applying x-ray diffraction. Although citing the Graham factors, the Office Action does not apply them. There is no “articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” with respect to the conclusion that “[o]ne having ordinary skill in the art would apply these [small] angles of incidence to the method of the Kane reference, powder x-ray diffraction is a preferred method of analysis (claims 27 and 38)” (Action at page 3, lines 21-23). It is well established that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The present rejection does not meet these standards.

In this case, not only does the Blanton reference fail to describe the use of x-ray radiation on plugs of solid material, the Examiner has provided no reasoning as to why a skilled artisan in the pharmaceutical industry would be motivated to use a technique for measuring thin film properties used by practitioners of LC and OLED displays (or vice versa). Absent some reason why a person of ordinary skill, faced with the above-noted

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incompatibilities, would have nonetheless sought to combine the teachings of the cited references, the rejection for alleged obviousness is improper and should be withdrawn.

For at least these reasons, Applicants request reconsideration and withdrawal of the rejection.

Claim 31 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Kane, in view of Blanton, as applied to claims 27-30, 32-36, 38 and 44-47 above, in view of Appleby, et al.(U.S. 7,410,606) (hereinafter “Appleby”). Claim 31 depends from claim 27 and defines over the cited art for at least the same reasons as noted above.

Applicants also request that this rejection be reconsidered and withdrawn.

### **Conclusion**

Applicants believe that the foregoing constitutes a complete and full response to the Office Action of record. In view of the foregoing remarks, Applicants respectfully submit that the pending claims are in condition for allowance and notification to that effect is earnestly requested.

The Commissioner is hereby authorized to charge any fee deficiency, charge any additional fees, or credit any overpayment of fees, associated with this application in connection with this filing, or any future filing, submitted to the U.S. Patent and Trademark Office during the pendency of this application, to Deposit Account No. 23-3050.

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